

CLAIMS

1. An instrument display comprising:
 - a panel mounted to a vehicle structure and including at least one graphical image indicating a vehicle operating condition;
 - a light guide mounted for movement relative to said graphical image;
 - a light source mounted to said light guide to illuminate at least a portion of said light guide;
 - a circuit board for controlling operational characteristics of said light guide and said light source; and
 - a non-contact coupling electrically connecting said light source to said circuit board.
2. The display of claim 1 wherein said non-contact coupling comprises an electromagnetic coupling.
3. The display of claim 2 including a power source electrically connected to said circuit board and operably coupled to said light guide to move said light guide relative to said graphical image.
4. The display of claim 3 wherein said power source comprises a motor including a motor output shaft coupled to a mounting portion formed on said light guide.

5. The display of claim 4 including a non-rotating coil assembly mounted to said circuit board and surrounding a portion of said motor output shaft.
6. The display of claim 5 including a rotating coil assembly mounted to and surrounding said mounting portion of said light guide wherein said rotating coil assembly is received within said non-rotating coil assembly with a clearance established between said rotating and non-rotating coil assemblies to allow said light guide to freely rotate.
7. The display of claim 6 wherein said non-rotating coil assembly includes a housing defining an interior cavity and a magnet wire winding wound around an exterior surface of said housing, said magnet wire winding having first and second wire ends that are fixed to electrical posts supported by said circuit board.
8. The display of claim 7 wherein said rotating coil assembly includes a wire winding wound around said mounting portion of said light guide, said wire winding including a pair of wire ends that are connected to said light source.
9. The display of claim 1 wherein said light guide comprises a pointer having a longitudinally extending body with a first end supporting said mounting portion and a second end cooperating with said graphical image to indicate the vehicle operating condition and wherein a portion of an external surface of said body is formed with a predetermined roughness to control luminance.

10. The display of claim 9 wherein said predetermined roughness varies for pointers having different lengths.

11. The display of claim 1 wherein said light guide comprises a pointer having a longitudinally extending body with a first end supporting said mounting portion and a second end cooperating with said graphical image to indicate the vehicle operating condition and wherein a portion of an external surface of said body is formed with a textured surface extending from said first end toward said second end to evenly illuminate said pointer.

12. The display of claim 11 wherein said textured surface comprises a plurality of prisms spaced apart from each other and extending from said first end to said second end.

13. A method for illuminating a light guide on an instrument display comprising the steps of:

- (a) mounting a light guide for movement relative to a graphical image;
- (b) mounting a light source directly to the light guide;
- (c) mounting a circuit board to a vehicle structure to control operational characteristics of the light guide and the light source; and
- (d) coupling the light source to the circuit board with a non-contact electromagnetic coupling.

14. The method of claim 13 including the step of forming a portion of an external surface of the light guide with a predetermined roughness to control luminance.

15. The method of claim 14 including the step of varying roughness in response to a change in length of the light guide.

16. The method of claim 13 including the step of forming a portion of an external surface of the light guide with a textured surface extending from a first light guide end toward a second light guide end to evenly illuminate the light guide.

17. The method of claim 16 including the step of forming the textured surface as a plurality of prisms spaced apart from each other along the length of the light guide.

18. The method of claim 13 including the steps of electrically connecting a motor having a motor output shaft to the circuit board, operably coupling the motor output shaft to the light guide to move the light guide relative to the graphical image, mounting a non-rotating coil assembly to the circuit board such that the non-rotating coil surrounds a portion of the motor output shaft, mounting a rotating coil assembly to the light guide, inserting the rotating coil assembly within the non-rotating coil assembly with a clearance established between the rotating and non-rotating coil assemblies to allow the light guide to rotate freely, and powering the light source by transferring power from the non-rotating coil assembly to the rotating coil assembly.

19. An instrument display comprising:

a panel mounted to a vehicle structure and including at least one graphical image indicating a vehicle operating condition;

a light guide mounted for movement relative to said graphical image, said light guide including a body portion with a textured external surface extending along the length of the body portion;

a light source cooperating with said textured external surface to provide even illumination of said light guide;

a circuit board for controlling operational characteristics of said light guide and said light source; and

a coupling electrically connecting said light source to said circuit board.

20. The display of claim 19 wherein said light source is mounted to said light guide and wherein said coupling comprises a non-contact electromagnetic coupling.